Socioeconomic Position and Self-Rated Health: The Contribution of Childhood Socioeconomic Circumstances, Adult Socioeconomic Status, and Material Resources

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Objectives. We examined socioeconomic inequalities in self-rated health by analyzing indicators of childhood socioeconomic circumstances, adult socioeconomic position, and current material resources.

Methods. We collected data on middle-aged adults employed by the City of Helsinki (n = 8970; 67% response rate). Associations between 7 socioeconomic indicators and health self-ratings of less than "good" were examined with sequential logistic regression models.

Results. After adjustment for age, each socioeconomic indicator was inversely associated with self-rated health. Childhood economic difficulties, but not parental education, were associated with health independently of all other socioeconomic indicators. The associations of respondents' own education and occupational class with health remained when adjusted for other socioeconomic indicators. Home ownership and economic difficulties, but not household income, were the material indicators associated with health after full adjustment.

Conclusions. Own education and occupational class showed consistent associations with health, but the association with income disappeared after adjustment for other socioeconomic indicators. The effect of parental education on health was mediated by the respondent's own education. Both childhood and adulthood economic difficulties showed clear associations with health and with conventional socioeconomic indicators. (*Am J Public Health.* 2005;95:1403–1409. doi:10.2105/AJPH.2004.047969)

Socioeconomic status or position (SEP) is a powerful predictor of premature morbidity and mortality. An association between SEP and health has been found across different industrial societies for several major diseases and causes of death.[1,2] However, the exact ways in which SEP is associated with health are still not fully understood. A key challenge to a deeper understanding of this association is the fact that SEP is a multidimensional theoretical construct that covers a variety of social and financial circumstances. These circumstances can be measured using several different indicators.[3,4] Although all of these indicators reflect one's position in the socioeconomic hierarchy, they also represent different dimensions of SEP, and each indicator only partially captures the full range of this broad summary concept. Therefore, any single socioeconomic indicator from 1 point of time is unlikely to provide a sufficient explanation for socioeconomic inequalities in health.

Various mediating mechanisms have been suggested for the association between SEP and health.[5,6] These mechanisms may not be exactly the same for all socioeconomic indicators.[7,8] The conventional indicators of SEP include education, occupational class, and income.[3,4] Educational level and occupational class can be considered as indicators of one's status and social standing. Educational level is a major factor in sorting people into positions with different tasks and rewards, and, like occupational class, it may reflect shared lifestyles and cultural values held by socioeconomic groups. Because educational level relates more directly to knowledge and skills than do other socioeconomic indicators, its role in health-related behaviors may be prominent, whereas occupational class may better reflect physical and psychosocial working conditions.

Furthermore, educational level and occupational class influence people's access to material resources. The key measure of material resources is income, but other indicators, ranging from immediate economic difficulties[9] to long-term cumulative wealth,[10] are often used. Material resources may influence health indirectly by imposing financial constraints on some healthy behaviors and, more directly, by affecting living conditions and other factors associated with financial and material disadvantage.[7,11] Furthermore, socioeconomic influences on adult health may go back to one's childhood.[12–14] Not only are those born into higher SEPs more likely to end up in higher SEPs themselves,[15] but socioeconomic disadvantage in childhood may itself be associated with poorer health in later life, and this association appears to be partly independent of adult SEP.[16–18]

Previous studies that have examined socioeconomic inequalities in health using multiple indicators of SEP have shown that the contributions of these indicators are partly independent of each other.[19–22] Furthermore, the prevalence of poor health is particularly high if several disadvantageous socioeconomic characteristics are present.[23–25] This empirical evidence thus supports the view that there is a need for approaches that comprehensively analyze socioeconomic influences on health. The purpose of this study was to examine socioeconomic inequalities in self-rated health among middle-aged women and men by several indicators, ranging from childhood socioeconomic status or circumstances to adult socioeconomic position and current material resources.

METHODS

Data

Data were obtained from middle-aged adults employed by the City of Helsinki,[26] which employs nearly 40 000 people. Three separate cross-sectional baseline surveys

were conducted in 2000, 2001, and 2002. A self-administered questionnaire was sent to each employee identified in the personnel register who, during the year of the survey, reached the age of 40, 45, 50, 55, or 60 years (n=13 374). After 2 reminders the overall response rate was 67%. The data include 7171 women and 1799 men, reflecting the overall gender ratio of City of Helsinki employees. The data are generally representative of the target population, but younger people and manual workers were underrepresented among the respondents.[27]

Measures

Health status was assessed by self-rated health. Self-rated health is a commonly used summary measure of general health, combining information on physical health, functioning, and psychological well-being.[28] Self-rated health lacks a direct clinical equivalent, but it correlates with more complex, multi-item measures of general health[29] and predicts future health outcomes, including mortality.[30] By its very nature, self-rated health has a subjective component, reflecting past experiences as well as future expectations,[30] but it is relatively stable over time and shows high test–retest reliability.[31] In our study, the participants were asked to rate their health on a 5-point scale with the response alternatives "excellent," "very good," "good," "fair," and "poor." Those responding with either of the last 2 choices were considered to be in less-than-good health.

Parental education and childhood economic difficulties were included as indicators of childhood socioeconomic circumstances. Educational levels of both parents were determined, and that of the parent with the more advanced education was chosen to indicate parental education. The response alternatives were collapsed into 3 groups: primary school or less (basic education); secondary school or vocational training (intermediate education); and matriculation/college examination or more (higher education). Childhood economic difficulties were assessed with the question "Did you experience any of the following life events or circumstances in your childhood or adolescence (before your 16th birthday)?" Those with a positive response to the item "our family had serious economic difficulties" were considered to have experienced childhood economic difficulties.

Respondent educational level and occupational class were considered as indicators of adult socioeconomic position. Educational level was divided into 3 levels corresponding to secondary or vocational school (basic education), matriculation/college examination (intermediate education), and university degree (higher education). These levels were adjusted to accommodate the major increase in the overall level of formal education in the population.

Occupational class consisted of 4 hierarchical groups: managers and professionals, semiprofessionals, routine nonmanual employees, and manual workers. Manual workers were first identified using the socioeconomic classification of Statistics Finland[32]; managers and professionals, semiprofessionals, and routine nonmanual employees were then identified according to the occupational classification of the City of Helsinki.

Indicators of current material resources were household income per consumption unit, home ownership, and economic difficulties. The respondents were asked to report the overall income of their household during a typical month, excluding taxes and including welfare benefits. Household size was taken into account using weights of the modified Organization for Economic Cooperation and Development (OECD) equivalence scale: the respondent, 1; other adults, 0.5; and children, 0.3. Household income was divided into separate quartiles for women and men. Home ownership, a commonly used indicator of wealth and affluence,[3] was divided into owner-occupiers and nonowners (renters and others). Economic difficulty was determined by 2 questions: "How often do you have enough money to buy the food or clothing you or your family need?"; and "How much difficulty do you have in meeting the payment of bills?" Responses were combined into 1 summary indicator with 3 categories describing the degree of economic difficulties.

The distributions of the socioeconomic indicators are presented in Table 1. Correlations between the socioeconomic indicators were also determined, and all indicators were positively correlated. However, diagnostics for multicollinearity showed acceptable values (the highest variance inflation factor, 2.56, was found for education), and in the statistical analyses, parameter estimates were stable and had relatively narrow confidence intervals.

Statistical Methods

All analyses were conducted separately for women and men. Age-adjusted prevalence of less-than-good health with 95% confidence intervals (CIs) by each socioeconomic indicator is presented first (Table 1). Logistic regression analysis was then used to examine associations of several socioeconomic indicators with health simultaneously. After fitting base models that included each socioeconomic indicator individually adjusting for age, we added the 2 indicators of childhood socioeconomic circumstances, then the indicators of adult socioeconomic position, and finally the indicators of current material resources. In this final model, all socioeconomic indicators were mutually adjusted for each other. The order of modeling roughly corresponds to the assumed temporal order among the socioeconomic indicators: childhood socioeconomic circumstances may play a role in determining adult socioeconomic position, which, in turn, may contribute to current material resources. The results from the models are expressed as odds ratios and 95% CIs.

RESULTS

Table 1 presents the age-adjusted prevalence of less-than-good self-rated health organized by socioeconomic indicators. Overall, 27% of women and 29% of men reported less-than-good health, but the percentages varied substantially between the categories of socioeconomic indicators. For each socioeconomic indicator, those in a less advantageous position reported less-than-good health more often, and the inequalities were particularly large across categories of respondents' own education, occupational class, and current economic difficulties.

Associations between the socioeconomic indicators and self-rated health were then analyzed by logistic regression models. When examined individually, all socioeconomic indicators were inversely associated with self-rated health in women (Table 2). The indicators of childhood socioeconomic circumstances

TABLE 1—Distribution of Socioeconomic Indicators and Age-Adjusted Prevalence of Self-Rated Less-Than-Good Health, by Socioeconomic Indicators: City Employees Aged 40–60 Years (N = 8970), Helsinki, Finland, 2000–2002

	Women		Men	
	No.	Percentage Reporting Less-Than-Good Health (95% CI)	No.	Percentage Reporting Less-Than-Good Health (95% CI)
Parental education				
Higher	1427	22 (20, 24)	448	24 (20, 28)
Intermediate	1848	26 (24, 28)	448	27 (23, 31)
Basic	3762	29 (27, 30)	865	31 (28, 34)
Childhood economic difficulties				
No	5736	25 (24, 26)	1445	27 (25, 29)
Yes	1235	37 (34, 39)	307	34 (29, 39)
Own education				
Higher	1720	20 (18, 22)	568	19 (15, 22)
Intermediate	2293	24 (22, 26)	489	28 (24, 32)
Basic	3044	32 (31, 34)	719	37 (33, 40)
Occupational class				
Manager/professional	1891	20 (18, 22)	753	21 (18, 24)
Semiprofessional	1300	24 (21, 26)	338	30 (25, 34)
Routine non–manual worker	2961	30 (28, 32)	179	30 (24, 37)
Manual worker	835	35 (32, 38)	477	38 (33, 42)
Household income, quartile				
Highest	1708	24 (22, 26)	418	26 (22, 31)
Third	1724	27 (25, 29)	444	25 (21, 29)
Second	1764	29 (27, 31)	429	31 (27, 35)
Lowest	1698	30 (28, 32)	474	33 (29, 38)
Home ownership				
Yes	4599	24 (23, 25)	1218	25 (23, 28)
No	2463	32 (30, 34)	559	35 (31, 40)
Current economic difficulties				
None	3583	22 (21, 23)	916	24 (22, 27)
Occasional	1861	29 (27, 31)	452	28 (24, 33)
Frequent	1605	37 (34, 39)	402	39 (35, 44)

Note. CI = confidence interval.

remained associated with self-rated health after mutual adjustment. Parental education lost its association with health after adjusting for own education, but childhood economic difficulties remained associated with health after all further adjustments. The association between own education and health was weakened when occupational class was added to the model, and that between occupational class and health also became weaker than when examined individually. However, adjusting for current material resources did not affect the associations between these status indicators and health. The associations between household income and health disappeared after adjustment for childhood socioeconomic circumstances and adult socioeconomic position, whereas the associations of the other material indicators with health remained but were weakened.

The results for men were strikingly similar to those for women (Table 3). When the socioeconomic indicators were examined individually, all indicators were also associated with self-rated health in men. The association between childhood economic difficulties and health was initially weaker in men than in women, and it became weaker with each adjustment. In addition, for men, occupational class showed no association with self-rated health after childhood socioeconomic circumstances and own education were taken into account. Otherwise, all associations were very similar in women and men.

The data in Tables 2 and 3 show the associations between the socioeconomic indicators and self-rated health after adjusting for the indicators that were assumed to temporally precede these socioeconomic indicators. These associations tended to be weaker than when the socioeconomic indicators were examined individually. However, the tables do not show which of the temporally preceding indicators most affected the associations of the status and material indicators with health. Additional analyses (data not shown) showed that the association between occupational class and health was weakened most by the adjustment for own education, whereas the associations between current material resources and health were equally weakened by adjustment for the indicators of childhood socioeconomic circumstances, adult socioeconomic position, and the material resources that temporally precede these indicators.

DISCUSSION

We examined socioeconomic inequalities in self-rated health cross-sectionally using a comprehensive set of socioeconomic indicators. When examined individually, all socioeconomic indicators were strongly associated with health in both women and men. However, simultaneous analysis of the socioeconomic indicators showed that, whereas some of the indicators have independent associations with health, the associations of others may reflect the effects of other socioeconomic indicators or be mediated by them.

Educational level and occupational class were used as measures of adult socioeconomic position. Both of these indicators showed a strong association with health when examined individually. When these indicators were examined simultaneously, their associations with health weakened, but both still showed independent associations with health. Childhood socioeconomic circumstances and current material resources had only weak

TABLE 2—Associations Between Socioeconomic Indicators and Self-Rated Less-Than-Good Health, Adjusted for Age: Female City Employees Aged 40–60 Years (n = 7171), Helsinki, Finland, 2000–2002

	OR (95% CI)						
	Individual Effect	Model 1: Parental Education + Childhood Economic Difficulties	Model 2: Model 1 + Own Education	Model 3: Model 2 + Occupational Class	Model 4: Model 3 + Household Income	Model 5: Model 4 + Home Ownership	Model 6: Model 5 + Economic Difficulties
Parental education							
Higher	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Intermediate	1.28 (1.07, 1.53)	1.22 (1.02, 1.46)	1.03 (0.86, 1.24)	1.02 (0.85, 1.23)	1.02 (0.85, 1.23)	1.02 (0.85, 1.23)	1.02 (0.85, 1.23)
Basic	1.45 (1.24, 1.69)	1.34 (1.14, 1.57)	1.03 (0.86, 1.22)	1.01 (0.85, 1.20)	1.01 (0.85, 1.20)	1.01 (0.85, 1.20)	1.02 (0.85, 1.21)
Childhood economic difficulties							
No	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Yes	1.81 (1.58, 2.09)	1.75 (1.52, 2.02)	1.72 (1.49, 1.98)	1.71 (1.48, 1.97)	1.70 (1.48, 1.97)	1.68 (1.45, 1.94)	1.58 (1.37, 1.82)
Own education							
Higher	1.00	…	1.00	1.00	1.00	1.00	1.00
Intermediate	1.31 (1.12, 1.55)	…	1.29 (1.09, 1.53)	1.11 (0.89, 1.38)	1.10 (0.88, 1.38)	1.10 (0.88, 1.37)	1.10 (0.88, 1.37)
Basic	1.95 (1.67, 2.26)	…	1.85 (1.57, 2.18)	1.36 (1.05, 1.77)	1.35 (1.04, 1.75)	1.32 (1.02, 1.71)	1.31 (1.01, 1.70)
Occupational class							
Manager/professional	1.00	…	…	1.00	1.00	1.00	1.00
Semiprofessional	1.27 (1.06, 1.53)	…	…	1.15 (0.91, 1.45)	1.13 (0.89, 1.43)	1.12 (0.89, 1.42)	1.12 (0.89, 1.41)
Routine non–manual worker	1.76 (1.52, 2.04)	…	…	1.37 (1.08, 1.73)	1.34 (1.05, 1.70)	1.30 (1.03, 1.65)	1.27 (1.00, 1.61)
Manual worker	2.19 (1.80, 2.67)	…	…	1.60 (1.21, 2.13)	1.55 (1.17, 2.07)	1.48 (1.11, 1.98)	1.43 (1.07, 1.91)
Household income, quartile							
Highest	1.00	…	…	…	1.00	1.00	1.00
Third	1.21 (1.03, 1.43)	…	…	…	1.08 (0.92, 1.28)	1.07 (0.91, 1.28)	1.04 (0.88, 1.23)
Second	1.41 (1.20, 1.66)	…	…	…	1.12 (0.94, 1.33)	1.10 (0.93, 1.31)	1.04 (0.87, 1.23)
Lowest	1.46 (1.23, 1.72)	…	…	…	1.10 (0.92, 1.32)	1.07 (0.89, 1.28)	0.95 (0.79, 1.14)
Home ownership							
Yes	1.00	…	…	…	…	1.00	1.00
No	1.52 (1.35, 1.72)	…	…	…	…	1.27 (1.12, 1.44)	1.15 (1.01, 1.31)
Current economic difficulties							
None	1.00	…	…	…	…	…	1.00
Occasional	1.45 (1.26, 1.66)	…	…	…	…	…	1.31 (1.13, 1.51)
Frequent	2.14 (1.85, 2.46)	…	…	…	…	…	1.76 (1.51, 2.05)

Note. OR = odds ratio; CI = confidence interval.

effects on the associations between indicators of adult socioeconomic position and health.

Household income was also associated with health when examined individually, but the association disappeared when adjusted for childhood socioeconomic circumstances and adult socioeconomic position. Individual income has been shown to be associated with health across several industrial countries, and this association has usually remained when educational level and occupational class have been taken into account.[33–36] However, in Finland, income-related health inequalities have been relatively modest.[37] In a previous Finnish study,[38] the association between income and health was markedly weakened but remained after adjusting for employment status, education, and social class; for women, however, when household income was used as the measure of income the association practically disappeared.

Home ownership remained associated with health independently of all other socioeconomic indicators. Several previous, mainly British studies have also found home ownership to be associated with health, even independent of, and more strongly than, income and other indicators of material resources.[39,40] Therefore, our finding is not exceptional. The possible mechanisms by which home ownership is associated with health have been widely discussed. The most common interpretation has been that home ownership reflects long-term accumulation of material wealth.[41] Other suggestions include direct effects of housing quality[42,43] and differences between living areas.[44,45] Home ownership may also reflect wealth of the family of origin.[18] In our study, about 50% of the association between

TABLE 3—Associations Between Socioeconomic Indicators and Self-Rated Less-Than-Good Health, Adjusted for Age: Male City Employees Aged 40–60 Years (n = 1799), Helsinki, Finland, 2000–2002

	OR (95% CI)						
	Individual Effect	Model 1: Parental Education + Childhood Economic Difficulties	Model 2: Model 1 + Own Education	Model 3: Model 2 + Occupational Class	Model 4: Model 3 + Household Income	Model 5: Model 4 + Home Ownership	Model 6: Model 5 + Economic Difficulties
Parental education							
Higher	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Intermediate	1.19 (0.87, 1.64)	1.17 (0.86, 1.61)	0.90 (0.64, 1.25)	0.90 (0.65, 1.25)	0.90 (0.65, 1.26)	0.92 (0.66, 1.28)	0.92 (0.66, 1.29)
Basic	1.43 (1.09, 1.87)	1.34 (1.04, 1.81)	0.95 (0.70, 1.28)	0.94 (0.69, 1.25)	0.95 (0.69, 1.28)	0.96 (0.71, 1.30)	0.97 (0.71, 1.31)
Childhood economic difficulties							
No	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Yes	1.41 (1.07, 1.85)	1.35 (1.02, 1.77)	1.30 (0.98, 1.73)	1.28 (0.96, 1.70)	1.28 (0.96, 1.70)	1.24 (0.94, 1.65)	1.17 (0.88, 1.56)
Own education							
Higher	1.00	. . .	1.00	1.00	1.00	1.00	1.00
Intermediate	1.74 (1.28, 2.35)	. . .	1.76 (1.29, 2.40)	1.62 (1.15, 2.30)	1.58 (1.12, 2.25)	1.55 (1.09, 2.20)	1.52 (1.07, 2.16)
Basic	2.48 (1.90, 3.25)	. . .	2.49 (1.85, 3.34)	1.97 (1.30, 2.98)	1.90 (1.25, 2.89)	1.84 (1.21, 2.80)	1.80 (1.19, 2.74)
Occupational class							
Managers and professional	1.00	. . .	. . .	1.00	1.00	1.00	1.00
Semiprofessional	1.64 (1.22, 2.22)	. . .	. . .	1.18 (0.82, 1.69)	1.19 (0.83, 1.71)	1.22 (0.85, 1.75)	1.17 (0.82, 1.68)
Routine non–manual	1.56 (1.06, 2.31)	. . .	. . .	1.05 (0.67, 1.65)	1.06 (0.67, 1.67)	0.96 (0.60, 1.53)	0.93 (0.58, 1.49)
Manual worker	2.34 (1.79, 3.05)	. . .	. . .	1.44 (0.97, 2.15)	1.44 (0.97, 2.15)	1.37 (0.91, 2.07)	1.30 (0.87, 1.95)
Household income, quartile							
Highest	1.00	. . .	. . .	. . .	1.00	1.00	1.00
Third	1.00 (0.73, 1.37)	. . .	. . .	. . .	0.88 (0.63, 1.22)	0.89 (0.64, 1.23)	0.90 (0.65, 1.24)
Second	1.42 (1.04, 1.94)	. . .	. . .	. . .	1.19 (0.87, 1.65)	1.23 (0.89, 1.70)	1.20 (0.87, 1.67)
Lowest	1.46 (1.06, 2.01)	. . .	. . .	. . .	1.08 (0.77, 1.51)	1.08 (0.77, 1.51)	0.99 (0.70, 1.39)
Home ownership							
Yes	1.00	. . .	. . .	. . .	. . .	1.00	1.00
No	1.70 (1.35, 2.16)	. . .	. . .	. . .	. . .	1.43 (1.11, 1.84)	1.34 (1.04, 1.73)
Current economic difficulties							
None	1.00	. . .	. . .	. . .	. . .	. . .	1.00
Occasional	1.38 (1.05, 1.81)	. . .	. . .	. . .	. . .	. . .	1.18 (0.89, 1.56)
Frequent	2.07 (1.58, 2.73)	. . .	. . .	. . .	. . .	. . .	1.65 (1.23, 2.21)

Note. OR = odds ratio; CI = confidence interval.

home ownership and health was explained by the other socioeconomic indicators. Whereas many of the explanations mentioned earlier in this section may be involved, our study confirms that if home ownership is mainly an indicator of material resources, these resources are unrelated to current disposable income.

Among the indicators of material resources, current economic difficulty was most strongly associated with health. Because economic difficulties were not limited to the lowest socioeconomic groups and the respondents were all employed, it is not likely that this indicator describes poverty as such. However, there was a strong gradient in the association between economic difficulties and health, the strength of which was only slightly reduced by adjustment for all other socioeconomic indicators.

The main focus of this study was in current socioeconomic circumstances, but because socioeconomic position may also have intergenerational effects on health, 2 indicators of childhood socioeconomic circumstances were included. The association between childhood economic difficulties and health tended to be different between women and men. Among women this association was maintained after adjustment, whereas in men it disappeared. Furthermore, the association tended to be stronger in women when the only adjustment made was for age. The reasons for this gender difference are not clear. In contrast, in both genders the association between parental education and health disappeared when own education was taken into account. This suggests that the effect of parental education on health is mediated by own education. Our results on the associations between childhood socioeconomic circumstances and health, therefore, mainly correspond to a previous Finnish study[46] that found that childhood economic difficulties were associated with

health independently of own educational level, but that the effect of parental education was mediated by *own education*.

Many studies have found that, even if socioeconomic position in adulthood is taken into account, a modest association between childhood socioeconomic position and adult health remains.[17,18] However, like in previous Finnish studies,[46–48] in our study this association disappeared entirely. Furthermore, own education was more strongly associated with health than parental education when these indicators were examined individually. One explanation for the dominant role of own education in Finland is the vast increase in the level of formal education throughout the population in recent generations. The number of years of compulsory education has increased, and there has been a strong political emphasis on creating equal, universal educational opportunities. Even if family background still strongly influences one's educational attainment,[49] this national policy may have increased the importance of own education as a pathway mediating the effects of social origins.

Study Limitations

Our data were gathered from a relatively homogeneous sample of mostly full-time employed women and men. This likely removed some of the socioeconomic variation observed in health.[50] However, interrelationships between the socioeconomic indicators are presumably more or less similar to those in the general population.

Because the data were collected with cross-sectional surveys, with an overall response rate of 67%, causal order between the socioeconomic indicators and health cannot be determined with certainty. Specifically, poor health may be partly responsible for lower household income, being a renter, and having economic difficulties. However, as our data were gathered from current, economically active municipal employees, those most prone to health-related selection are likely to have been excluded from the study. Furthermore, longitudinal epidemiological studies suggest that the association between socioeconomic position and health is mainly causal, whereas the effect of reverse causality is relatively modest.[51,52] More recently, health economists have encouraged a wider application of statistical techniques commonly used in health economics to tackle the issue of reverse causality in studies on socioeconomic inequalities in health.[53,54] Whereas using such techniques may affect the results somewhat, they also indicate that reverse causality offers, at most, a partial explanation for socioeconomic inequalities in health. Therefore, although the results of our study must be interpreted with caution, we feel confident that causation is likely to run mainly from socioeconomic position to health rather than the reverse.

There is a possibility of bias in self-reported data, especially when those data concern childhood socioeconomic circumstances. However, circumstantial inquiries were made with simple survey questions, which may have reduced the risk of incorrect recall and reporting. Studies that follow a cohort from birth into adulthood need not rely on retrospective data, and also avoid some problems that relate to determining causality, but they are limited by attrition. Furthermore, so far, many such studies extend only to young adults, among whom serious health problems are relatively uncommon and may differ from those prevalent in older age groups. Self-rated health is a generally accepted indicator of overall health, but its precise conceptual content domains still need clarification. Socioeconomic differences in self-rated health do not exactly match with any other health indicator,[55] and they cannot be entirely explained by the higher prevalence of medically confirmed health problems in lower socioeconomic groups.[56]

Conclusions

Our study included both generic measures of one's position in the socioeconomic hierarchy and more limited measures of material disadvantage from different stages of life. Of the conventional indicators of socioeconomic position, education and occupational class remained associated with health, whereas the association between household income and health was less consistent. However, economic difficulties, especially in adulthood, were more strongly associated with health than were the conventional indicators. The associations of childhood and adulthood economic difficulties with health were independent of the conventional indicators, and were also independent of each other. Economic difficulties in early and adult life thus contribute to health in addition to the conventional socioeconomic indicators. Recent research has emphasized the need for examining socioeconomic influences on health over the entire lifecourse.[16,57,58] In our study, even indicators from the same stage of life were associated with health in a different way. Therefore, a comprehensive analysis of the socioeconomic contributions to health status is needed to examine a variety of parallel circumstances, as well as circumstances reflecting different stages of life. ■

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Contributors

All of the authors made substantial contributions to the origination of the study and interpretation of the results. M. Laaksonen conducted the analyses and led the writing, O. Rahkonen and P. Martikainen assisted with the design and writing of the article, and E. Lahelma was the project principal investigator and contributed to planning and writing.

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Human Participant Protection

The study protocol was approved by the ethical committees at the Department of Public Health, University of Helsinki, and the City of Helsinki Health Department. All participants were informed that participation in the study was voluntary. Researchers did not have access to data that would allow identification of specific individuals.

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